STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
POSITION DUTY STATEMENT
PM-0924 (REV 02/2021)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Research Data Specialist III	Planning & modal Programs/California Integrated Mobility	
WORKING TITLE	**POSITION NUMBER**	**EFFECTIVE DATE**
B-DADT Research Data Engineer	900-064-5770-XXX	

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

GENERAL STATEMENT:

The California Integrated Mobility Program is a greenfield where for the first time Caltrans will be using commercial-grade data skills. Your skills will define the Program and be used directly to ground decisions in data. Work with the California Integrated Travel Project (Cal-ITP) team that is helping Californians find and pay for transportation with their phones, starting with transit. Under general supervision of the Benefits Delivery and Decision Transformation (B-DADT) Analytics Unit Data Manager (RDM I), the Research Data Specialist III (RDS III) Data Engineer will independently perform a variety of tasks including data management, reproducible research, data analysis automation, data governance and data visualization. As the Data Engineer, the incumbent will work collaboratively with a variety of teams and staff at Caltrans to collect and maintain datasets, engineer data visualizations and dashboards, update and correct database(s), document datasets for analysts, and perform varied related tasks. The Data Engineer should be able to assist a team of Data Analysts and other stakeholders in using and share data in an automated and documented fashion. The RDS III will be expected to seek and incorporate user feedback and develop and update their products and datasets in an iterative and agile manner using version control and statistical programming languages such as Python or R. Expertise in a SQL or similar database technology is required. Detailed understanding of data warehousing and data lake technologies is welcome.

The RDA III will help the California Integrated Mobility Program better serve the people of California by unlocking key insights in our data and sharing it with varied stakeholders, including the public, state departments, and oversight entities while driving the adopting of the General Transit Feed Specification and contactless, open loop payments. The Data Engineer will communicate with stakeholders about what data is available and how to use it for decision making. The Data Engineer will also assist the RDM I with various special projects and reports as required. Effective handling of these complex tasks is critical to the department's continued success.

CORE COMPETENCIES:

As a Research Data Specialist III, the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

- **Learning on the Fly:** Learns quickly, is open to change, experiments, and is flexible. (Strengthen Stewardship and Drive Efficiency - Integrity)

- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Strengthen Stewardship and Drive Efficiency - Integrity)

- **Ethics and Integrity:** Demonstrated concern to be perceived as responsible, reliable, and trustworthy. Respects the confidentiality of information or concern shared by others. Honest and forthright. Conforms to accepted standards of conduct. (Strengthen Stewardship and Drive Efficiency - Equity)

- **Problem-solving and Decision-making :** Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Strengthen Stewardship and Drive Efficiency - Innovation)

- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence - Integrity)

- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Strengthen Stewardship and Drive Efficiency - Innovation)

- **Negotiation:** Negotiates in a manner that results in positive business outcomes, while maintaining strong relations with the other negotiating member. (Strengthen Stewardship and Drive Efficiency - Integrity)

- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Strengthen Stewardship and Drive Efficiency - Innovation)

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- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Strengthen Stewardship and Drive Efficiency - Integrity)

TYPICAL DUTIES:

Percentage Essential (E)/Marginal (M)[1]	Job Description
40% E	**Data Engineering and Data Management** • Independently research, identify, analyze, predict, and interpret trends datasets for permanent use. • Develop, test and iterate on extract, transform and load integrations of disparate data from across California Transit agencies, DRMT and other relevant data sources. • Establish work plans and monitor the progress of research activities to ensure timely completion of defined objectives. • Use software programs such as R, Python, SQL and Microsoft Excel to import, prepare and analyze data. • Use SQL and Data Warehousing to prepare data for long term storage and analysis. • Document enterprise data governance procedures and ensure a maximum amount of Caltrans data is being published. • Join datasets from across disparate environments. • Interact with internal and external APIs to get or to publish data. • Guide and mentor Data Analysts on the use of datasets.
30% E	**Data Visualization and Reporting, Data Documentation** • Collaborate with users and Cal-ITP team members to create data visualizations, dashboards, and reports for internal and external clients. • Assist with the automation of Federal Transit reporting included by not limited to the National Transit Database. • Visualize and describe quantitative data quality. • Write and maintain Data Dictionaries for each dataset. • Expertise in making reports reproducible, automating, parameterizing, and scheduling them as jobs to be shared with California's 400+ Transit Agencies, MPOs, and other stakeholders. • Work with Data Analysts to create new analysis datasets and publish with appropriate documentation.
15% E	**Stakeholder Engagement, Code Review** • Consult with other divisions within the department, such as the Division of Research, Innovation and System Information and the Division of Local Assistance to gather and consolidate user feedback, questions, and concerns for analysis. • Review Data Analysis code and provide feedback during code reviews using version control systems. • Facilitate meetings on data topics topics, consult with other California Integrated Mobility Program teams, and serve as a subject matter expert on multidisciplinary teams on the quality of our data. • Assist in the procurement of products, platforms,and standardization of data management best practices across Caltrans.
10% E	**Administrative and Logistical Support** • Coordinate training, meetings, and events as directed by the B-DADT RDM I and program management. • Monitor and respond to inquiries to the Integrated Mobility ticketing solution for data-engineering related tasks.
5% M	Perform other related duties as required to fulfill the Integrated Mobility Program's mission, goals and objectives. Additional duties may include, but are not limited to, assisting where needed within the team/ unit, which may include special assignments.

[1]ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.
 MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS
None.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS
• Experience working with or in proximity to government or highly regulated environments with legacy systems.
• Experience in reproducibility, data pipelines, and automated reporting.
• Experience with either the Python / PyData or R-Tidyverse stack or willingness to learn.
• Experience with SQL and Data Warehousing concepts.
• Experience with Batch ETL and tools like Apache Airflow or similar.
• Experience using Docker and containers to make reproducible environments.
• Experience deploying production data pipelines to cloud environments such as AWS / GCP / Azure.
• Knowledge of Git / Github based development workflows.
• Experience of Data Visualization using open source tools.
• Basic knowledge of machine learning and other data science concepts.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR
Caltrans seeks to improve staff and customer experience as well as to improve data for management and policymakers related to its outdated, paper based, and often siloed grants, asset management and metrics programs. Siloes drive up costs, reduce efficiencies and mask constraints from market solutions and outcome and data-driven management that support Caltrans stakeholders, policymakers and the public.

PUBLIC AND INTERNAL CONTACTS
This position will engage with external stakeholders in similar internally-facing positions in comparable agencies, and with internal partners to drive collaboration and alignment.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS
The incumbent may be required to sit for periods of time using a keyboard and video display terminal. May also be required to lift, carry, and move boxes of material under 25 pounds from one location to another. Employee will occasionally bend, stoop, kneel to pull or push objects, grasp objects with fingers, stand for long periods of time, and twist the body or neck in a sideways motion, either seated or standing.

The incumbent should be able to quickly adapt behavior and work methods in response to new information/priorities, and unexpected obstacles; multi-task; effectively interact with many levels of people in a cooperative manner; be decisive; take appropriate actions; and complete tasks or projects with a short notice. The incumbent should be able to deal effectively with pressure, maintain focus and intensity yet remain optimistic and persistent, even under adversity.

The incumbent shall act in a fair and ethical manner toward others and demonstrate a sense of responsibility and commitment to public services; develop new insights into situations and apply innovative solutions to make organizational improvements; be willing to take risks and initiate actions that involve a deliberate risk to achieve a recognized benefit or advantage; and value cultural diversity and other individual differences in the workforce.

WORK ENVIRONMENT
This position can be staffed from any of the Caltrans Districts, or at Headquarters. The position can be fully remote with regular e-meetings and predictable meetings at Headquarters. There may be predictable and infrequent travel to Headquarters and/or to Caltrans Districts.

I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

EMPLOYEE (Print)

EMPLOYEE (Signature)	DATE

I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

SUPERVISOR (Signature)	DATE